

CITY OF CARLSBAD  
2009 Growth Management Plan  
Monitoring Report

Carlsbad City Council

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Report prepared in cooperation with the following departments:

Community and Economic Development  
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Transportation  
Utilities  
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## Introduction

The purpose of this report is to provide information regarding the status of the Carlsbad Growth Management Plan (GMP) for the calendar year covering January 1, 2009 – December 31, 2009, and to verify that the plan is continuing to accomplish its stated objectives. The primary objectives of the GMP are to ensure that adequate public facilities are provided concurrent with growth, and to assure compliance with the ultimate dwelling unit limitations that were established by Proposition E, which was passed by voters in 1986.

## Performance Standards

Proposition E established broad guidelines for determining adequacy of public facilities. These guidelines are further defined in the Citywide Facilities and Improvements Plan (Sept. 16, 1986) by means of specific performance standards for each of the eleven public facilities. These public facilities, their performance standards, current status, and anticipated adequacy at buildout are outlined in Table 1 and Table 2, as follows:

**Table 1**  
**Performance Standards**

<b>Public Facility</b>	<b>Performance Standard</b>	<b>More Information on Page</b>
City Administrative Facilities	1,500 sq. ft. per 1,000 population must be scheduled for construction within a five-year period or prior to construction of 6,250 dwelling units, beginning at the time the need is first identified.	11
Library	800 sq. ft. (of library space) per 1,000 population must be scheduled for construction within a five-year period or prior to construction of 6,250 dwelling units, beginning at the time the need is first identified.	12
Wastewater Treatment Capacity	Sewer plant capacity is adequate for at least a five-year period.	14
Parks	3.0 acres of Community Park or Special Use Area per 1,000 population within the Park District* must be scheduled for construction within a five year period, or prior to construction of 1,562 dwelling units within the Park District beginning at the time the need is first identified.**	15
Drainage	Drainage facilities must be provided as required by the City concurrent with development.	17

**Table 1, Continued  
Performance Standards**

<b>Public Facility</b>	<b>Performance Standard</b>	<b>More Information on Page</b>
Circulation	No road segment or intersection in the Local Facility Management Zone (LFMZ) nor any road segment or intersection out of the zone which is impacted by development in the zone shall be projected to exceed a service level C during off-peak hours, nor service level D during peak hours. Impacted means where 20% or more of the traffic generated by the local facility management zone will use the road segment or intersection.	19
Fire	The number of dwelling units outside a five-minute "travel time" from the nearest fire station shall not exceed 1,500 units.	22
Open Space	Fifteen percent of the total land area in the Local Facility Management Zone (LFMZ) exclusive of environmentally constrained non-developable land must be set aside for permanent open space and must be available concurrent with development.	24
Schools	School capacity to meet projected enrollment within the Local Facility Management Zone (LFMZ) as determined by the appropriate school district must be provided prior to projected occupancy.	25
Sewer Collection System	Trunk-line capacity to meet demand, as determined by the appropriate sewer districts, must be provided concurrent with development.	26
Water Distribution System	Line capacity to meet demand as determined by the appropriate water district must be provided concurrent with development. A minimum of 10-day average storage capacity must be provided prior to any development.	28

**Table 2  
Facility Adequacy Status**

<b>Public Facility</b>	<b>CY 2009 Adequacy Status (Meets performance standard?)</b>	<b>Buildout Adequacy Status (Meets performance standard?)</b>
City Administrative Facilities	Yes	Yes
Library	Yes	Yes
Wastewater Treatment Capacity	Yes	Yes
Parks	Yes	Additional facilities to be provided*
Drainage	Yes	Additional facilities to be provided*
Circulation	Yes	Additional facilities to be provided*
Fire	Yes	Yes
Open Space	Yes	Additional facilities to be provided*
Schools	Yes	Yes
Sewer Collection System	Yes	Additional facilities to be provided*
Water Distribution System	Yes	Additional facilities to be provided*

\* For additional information, please see the expanded discussion on each individual public facility beginning on page 10.

### **What Happens if Facilities Do Not Meet the Performance Standard?**

The GMP requires development activity to stop (in a specific area of the city or citywide) if a performance standard is not being met, as described below:

- Administrative Facilities, Library, and Wastewater Treatment Capacity are facilities that serve the entire City. Their adequacy in meeting the performance standard is analyzed by considering the cumulative impact of citywide development. The failure of any one of these facilities to meet the adopted performance standard would affect the City as a whole. In that event, all development in the City would be halted until the deficiency is corrected.
- Parks are analyzed on a quadrant basis. This means that if the standard is not being met in the quadrant, development is halted for all Local Facility Management Zones (LFMZs, see description below) in the quadrant.
- Similar to parks, Fire facilities are analyzed on the basis of fire station districts which can comprise multiple LFMZs, and if the standard is not met for a district, then development would be halted in that district.
- The remaining facilities (Drainage, Circulation, Open Space, Schools, Sewer Collection System, and Water Distribution System) are analyzed on an LFMZ basis. If one of these facilities falls below the performance standard in a given LFMZ, development in that LFMZ would stop and other zones would not be affected if they are continuing to meet all performance standards.

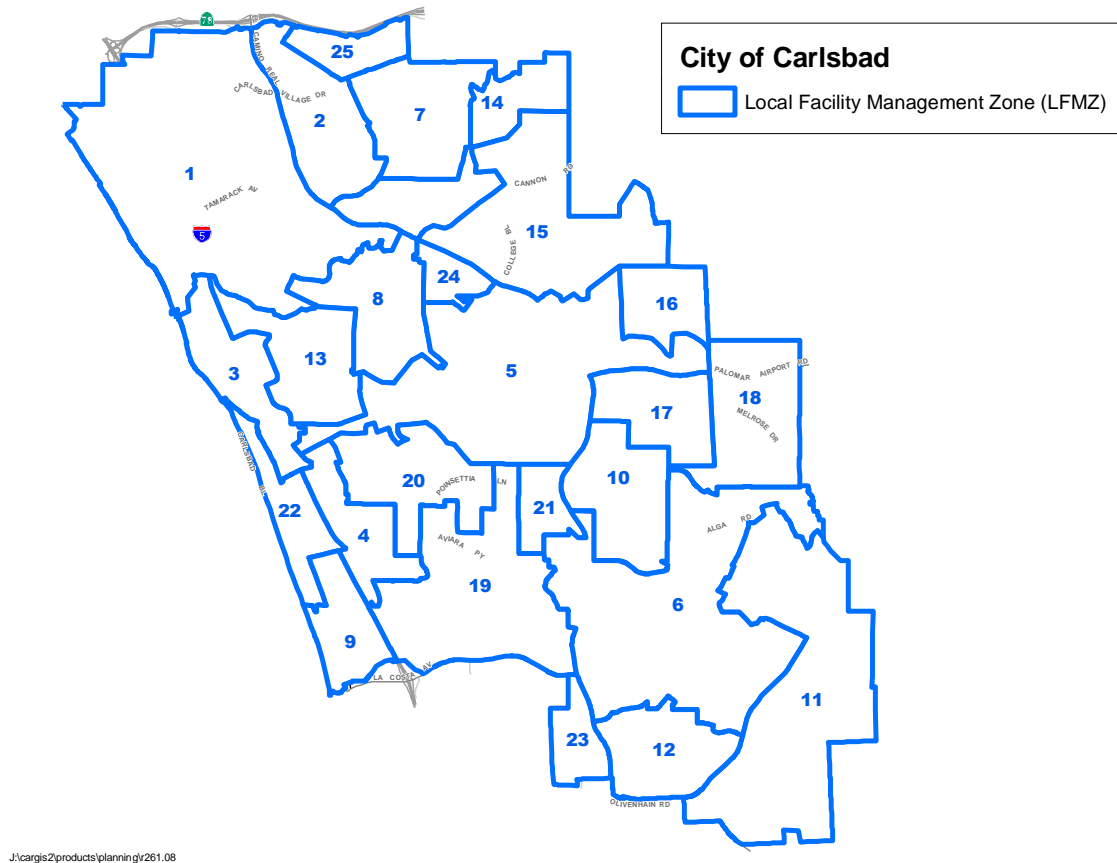
Please turn to page 11 for a description of the individual facility performance standards and an analysis on the adequacy of each facility.

### **Local Facility Management Zone Plans**

The Citywide Facilities and Improvements Plan divided the City into 25 Local Facilities Management Zones (LFMZ). Each LFMZ is required to have an adopted Local Facilities Management Plan (LFMP) prior to any development in the LFMZ. Of the twenty-five LFMZs, twenty-four have adopted LFMPs. Zone 25 is the only LFMZ to remain without an adopted plan. Prior to any development in Zone 25, an LFMP must be adopted.

Consistent with the GMP, the LFMP must: describe how the LFMZ will be developed, how compliance with the Growth Management standards will be achieved, how the necessary public facilities will be provided, and what financing mechanisms will be used for the facilities. Please see Figure A for the general boundaries and locations of the LFMZs.

**Figure A**



### **Population as a Measurement for Facility Performance Standards**

As indicated in Table 1, above, the performance standards for City Administrative facilities, Library facilities, and Parks are stated in terms of population. The demand for these facilities is based on each new dwelling unit built and the estimated number of new residents it adds to the city, which is determined using the average number of persons per household. According to the 2006 update to the Federal Census, the average number of persons per household in Carlsbad is 2.349 persons.

As of December 31, 2009, the City's population is estimated to be 104,425, which is based on 2.349 persons per household and the estimated number of dwelling units in Carlsbad, which is 44,455 (see page below for a discussion of residential development activity).

It should be noted that the above population estimates are for facility planning purposes only and not an official population estimate for Carlsbad. The federal census will be conducted again in 2010 and the persons per household number can be adjusted in the future as part of the monitoring process.

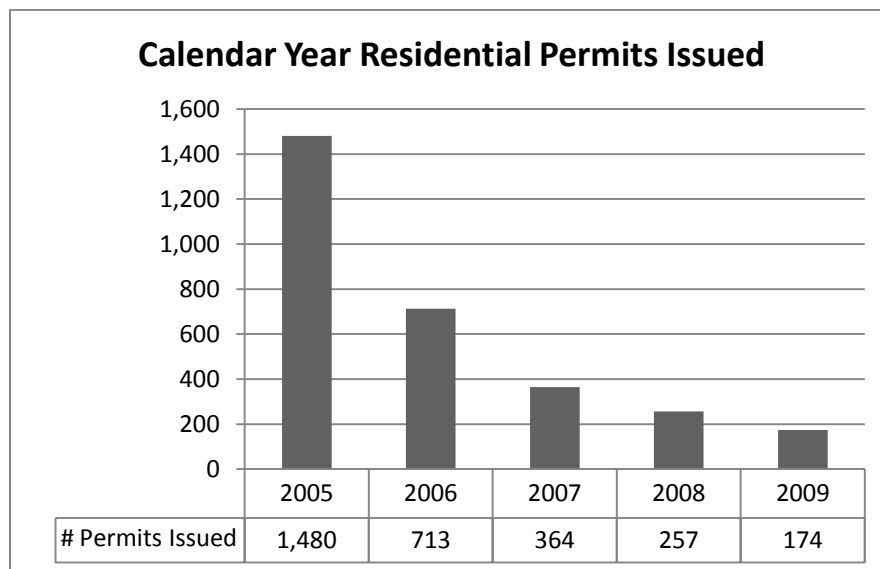
## 2009 Residential Development Activity

Building permits for 174 new dwelling units were issued during the Calendar Year (CY) 2009. Table 3 provides a breakdown by LFMZ. The number of new dwelling units in CY 2009 is lower than in the previous five years. Figure 2 shows the recent five year trend for the number of residential building permits issued.

**Table 3**  
**2009 Residential Development by LFMZ**

LFMZ	# of New Dwelling Units	LFMZ	# of New Dwelling Units
1	18	15	0
2	0	16	0
3(NW)	0	17	0
6(SE)	11	18	0
7	0	19	0
8	0	20	0
9	0	21	0
10	61	22	0
11	67	23	0
10	0	24	0
12	0	25	0
14	17		
<i>Citywide Total – 174 new dwelling units</i>			

**Figure 2**



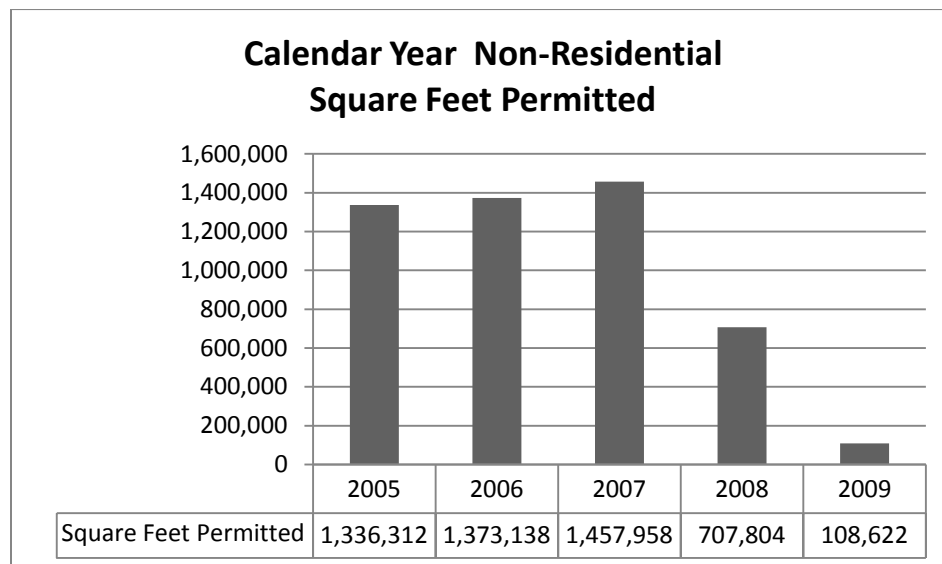
## Non-Residential Development Activity

Building permits for 108,622 square feet of new non-residential construction were issued during CY 2009, comprising both commercial and industrial development. Table 4 provides a breakdown by LFMZ. For CY 2009, the square footage of non-residential construction has decreased as compared to the previous three years (see Figure 3 for the recent five year trend in non-residential construction).

**Table 4**  
**2009 Non-Residential Development by LFMZ**

Non-residential					
LFMZ	Square Feet Permitted		LFMZ	Square Feet Permitted	
	Commercial	Industrial		Commercial	Industrial
1	0	0	12	0	0
2	0	0	13	979	0
3(NW)	60,668	0	14	0	0
5(NW)	0	11,093	17	35,882	0
5(NE)	0	0	18	0	0
5(SW)	0	0	19	0	0
6 (SE)	0	0	20	0	0
8	0	0	21	0	0
9	0	0	22	0	0
10	0	0	23	0	0
11	0	0			
			Citywide Subtotal	97,529	11,093
			<b>Citywide Non-residential Total</b>	<b>108,622</b>	

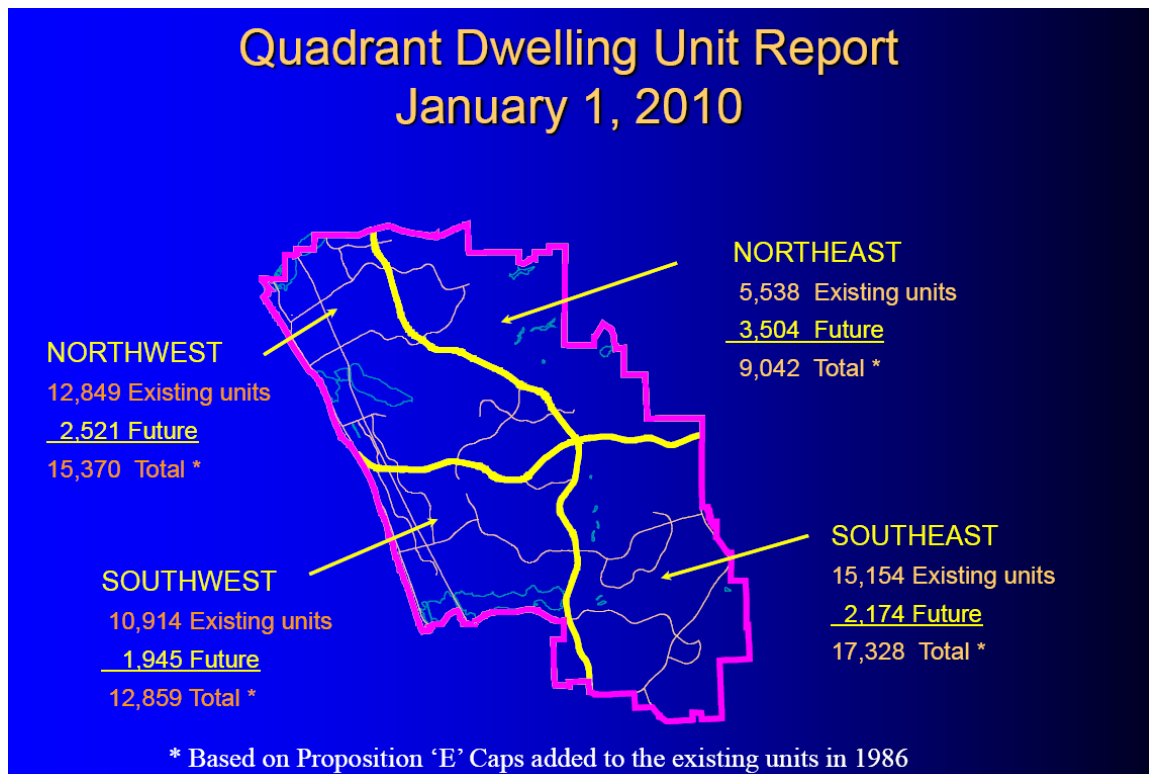
**Figure 3**



## Proposition E Compliance

The purpose of this part of the report is to demonstrate that the ultimate dwelling unit caps stated in Proposition E will not be exceeded. Proposition E states “the maximum number of residential dwelling units to be constructed or approved in the City after November 4, 1986 is as follows: Northwest Quadrant 5,844; Northeast Quadrant 6,166; Southwest Quadrant 10,667; Southeast Quadrant 10,801.” As shown in Figure 4, all quadrants are in compliance with the dwelling unit caps established by Proposition E for CY 2009.

Figure 4

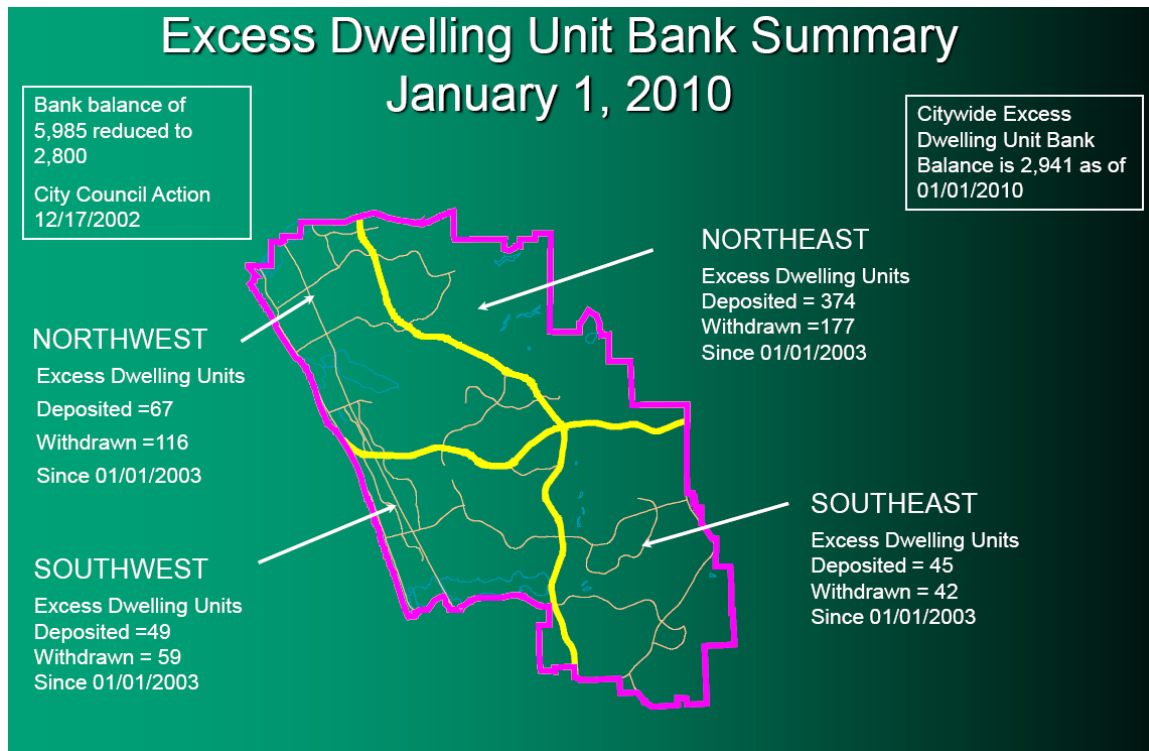


Council Policy Statement 43 (Proposition E “Excess Dwelling” Unit Bank) established a dwelling unit bank concept in order to enable the City to grant density increases for certain types of residential projects, such as affordable housing projects, while assuring that the Proposition E caps are not exceeded. For projects that develop below the allowable density under Growth Management, these “excess” dwelling units are placed into the Excess Dwelling Unit Bank (Bank), and those units are then available to allow other projects to exceed the allowable density.

On December 17, 2002, the City Council adopted Resolution No. 2002-350, which amended Council Policy Statement 43 by reducing the accumulated number of excess units from 5,985 to a new total of 2,800. Excess units may be allocated from the Bank to any quadrant based on the criteria in Council Policy Statement 43, so long as the citywide dwelling unit cap or individual quadrant caps are not exceeded. Please see Figure 5 for the Excess Dwelling Unit Bank status at the end of the CY 2009.



**Figure 5**



## **Buildout Analysis**

Under Growth Management, the maximum number of dwelling units that could be constructed is 54,599; however, as a result of the Excess Dwelling Unit Bank reduction in 2002, the potential number of dwelling units is estimated to be 51,414 units, which is less than what Growth Management allows. In addition, it is possible that the City may not have enough developable land to reach the Growth Management dwelling unit cap.

On February 26, 2010, the San Diego Association of Governments (SANDAG) adopted its periodic update to the 2050 Regional Growth Forecast. Along with all other cities in San Diego County, the forecast analyzed the development yield from available vacant land and areas of potential redevelopment in Carlsbad. According to the 2050 Regional Growth Forecast, the maximum number of dwelling units in Carlsbad is estimated to be 50,566 in the year 2050. Utilizing this forecast, the projected dwelling units and population for Carlsbad at buildout is shown in Table 5 below:

**Table 5**  
**2050 Dwelling Unit and Population Projections**

<b>Quadrant</b>	<b>Dwelling Units *</b>	<b>Population **</b>
NW	14,554	34,187
NE	8,048	18,905
SW	11,209	26,330
SE	16,755	39,357
Citywide Total	50,566	118,780

\* SANDAG 2050 Regional Growth Forecast

\*\* Calculated using household size of 2.349

### **Public Facility Financing**

In 1991, the City of Carlsbad established Community Facilities District No. 1 (CFD) to provide financing for a number of public facilities of citywide importance that are needed to meet the requirements of the GMP, including various road and intersection improvements, and the Dove Library. As LFMZ plans are adopted, they are conditioned to annex into the CFD at the time the first discretionary permit grants an entitlement to develop in the LFMZ. This ensures financing for public facilities that can accommodate future growth consistent with the criteria of Growth Management.

### **Status of the Facilities**

Beginning on page 11 is a discussion of the adequacy of each of the eleven public facilities addressed in Carlsbad's GMP.

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## CITY ADMINISTRATIVE FACILITIES

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### A. Performance Standard

1,500 sq. ft. per 1,000 population must be scheduled for construction within a five-year period or prior to construction of 6,250 dwelling units, beginning at the time the need is first identified.

### B. CY 2009 Facility Adequacy Analysis

Based on the estimated CY 2009 population figure of 104,425, the current demand for administrative facilities is **156,638** square feet. To date, City Administrative Facilities exceeds the performance standard. The existing inventory of City and Carlsbad Municipal Water District buildings (leased and owned) occupied for administrative services includes the following:

<u>Facility</u>	<u>Dept</u>	<u>Address</u>	<u>Sq. Ft.</u>
City Administration	City	1635 Faraday Avenue	68,000
City Council Chambers	City	1200 Carlsbad Village Dr	2,500
City Hall Complex	City	1200 Carlsbad Village Dr	13,500
City Yard	CSD	405 Oak Avenue	8,249
City Yard Modular Building	CSD	405 Oak Avenue	1,800
Housing & Redevelopment	H&R	2965 Roosevelt	3,200
Senior Center	P&R	799 Pine Street	6,750
Parks Administration	Parks	1166 Carlsbad Village Dr	504
Parks Modular/Break Room	Parks	1166 Carlsbad Village Dr	2,000
Safety Center	Pol	2560 Orion Way	64,000
Fleet Yard	PW	2480 Impala Drive	10,358
Water District	Wtr	5950 El Camino Real	18,000
Water District Modular	Wtr	5950 El Camino Real	696
<b>Total</b>			<b><u>199,557</u></b>

### C. Buildout Facility Adequacy Analysis

Based on the 2050 projected buildout population of 118,780, the demand for city administrative facilities will be **178,170** square feet. The existing **199,557** square feet of administrative facilities exceeds the Growth Management performance standard at buildout.

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## LIBRARY FACILITIES

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### A. Performance Standard

800 sq. ft. (of library space) per 1,000 population must be scheduled for construction within a five-year period or prior to construction of 6,250 dwelling units, beginning at the time the need is first identified.

Library space (leased/owned, public/non-public) is used as a standard library measurement of customer use and satisfaction and includes collection space, seating, meeting rooms, staff areas, technology, and other public facility needs. The performance standard, stated above, for library facilities was adopted by the City Council in 1986 as part of the Growth Management Plan's Citywide Facilities and Improvements Plan. This standard was originally developed at that time based on surveys of other libraries of comparable size and based on related standards (such as volumes per capita) set by the American Library Association.

### B. Current Inventory and Adequacy of Facilities

The current inventory of library facilities is as follows:

Owned:

Dove Library	64,000 s.f.
Cole Library	<u>24,352 s.f.</u>
Learning Center	<u>11,393 s.f.</u>
TOTAL	99,745 s.f.

Based on the Dec. 31, 2009 population estimate of 104,425, the growth management standard requires **83,540** s.f. of public library space. The Library adequately meets the growth management standard with current facilities (**99,745** s.f.).

### C. Facility Adequacy at Buildout

Based on the 2050 projected buildout population of 118,780, the demand for library facilities will be **95,024** s.f. The existing **99,745** square feet of library facilities exceeds the Growth Management standard at buildout.

It is possible that the City's population will not trigger the Growth Management Plan requirement to add additional space to the Cole Library before the city reaches buildout. However, structural conditions may require the Cole Library to be reconstructed prior to buildout.

A 1998 feasibility study conducted at the Cole Library indicated several structural and building code issues to be addressed within a reasonable time, including

such items as American's with Disabilities Act (ADA), mechanical, and electrical requirements. The City has already included a building replacement project within the Capital Improvement Program budget, currently scheduled between the years 2020 and buildout.

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## WASTEWATER TREATMENT CAPACITY

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### **A. Performance Standard**

Sewer plant capacity is adequate for at least a five-year period.

### **B. CY 2009 Facility Adequacy Analysis**

The recently completed Encina Wastewater Treatment Facility Phase V expansion will accommodate the ultimate buildout demand for the Carlsbad Sewer Service Area and therefore, currently provides adequate capacity in excess of the performance standard.

Carlsbad's CY 2009 average annual sewer flows of 7.15 million gallons per day (MGD) represents 70% of the City's 10.26 MGD capacity rights. The City's average annual sewage flow to the Encina Wastewater Treatment Facility for the previous five years is measured as follows:

Fiscal Year	Average Annual Flow
CY 2005	7.36 MGD
CY 2006	6.62 MGD
CY 2007	7.20 MGD
CY 2008	7.74 MGD
CY 2009	7.15 MGD

### **C. Buildout Facility Adequacy Analysis**

With the completion of the Encina Phase V expansion, adequate sewer treatment capacity exists to ensure compliance with the Growth Management wastewater performance standard through buildout of the Carlsbad sewer service area.

The 2003 City of Carlsbad Sewer Master Plan Update (currently being updated) conducts an analysis of annual future sewer flow through buildout of the city based on the Carlsbad General Plan land use projections, and indicates that the City's projected buildout flow is approximately 9.87 MGD. The City has purchased capacity rights to 10.26 MGD in the Encina expansion project, which ensures adequate wastewater treatment capacity is available to accommodate any unanticipated increase in future sewer flows.

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## PARKS

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### A. Performance Standard

3.0 acres of Community Park or Special Use Area per 1,000 population within the Park District \* must be scheduled for construction within a five year period, or prior to construction of 1,562 dwelling units within the Park District beginning at the time the need is first identified.\*\*

### B. CY 2009 Facility Adequacy Analysis

To date, all quadrants are in compliance with the performance standard.

<u>Quadrant</u>	<u>Current Inventory</u>	<u>Current Demand</u>
NW	90 acres	91 acres required
NE	42 acres	42 acres required
SW	71 acres	70 acres required
SE	<u>78 acres</u>	<u>112 acres</u> required
<b>Total</b>	<b>281 acres</b>	<b>315 acres</b>

The NW Quadrant, although 1 acre short of the acreage required, is not out of compliance with the GMP because neither has the time (5 years) nor dwelling units (1,562 dwelling units) trigger points been reached (refer to \*\* in Section A above and in the footnote below). The SE quadrant is also in compliance because Alga Norte Park is scheduled for construction\*\*\* and will add 32 acres to meet demand.

### C. Buildout Facility Adequacy Analysis

After construction of Alga Norte Park, the only Quadrant projected to be in deficit at buildout and requiring additional acreage to meet the performance standard is the NE Quadrant, which will require the construction of a park by 2021. This need could be met by either construction of Veteran's Memorial Park or Robertson Ranch Park.

\* "Park District" = "quadrant". There are four park districts within the city, corresponding to the four quadrants.

\*\* The threshold for triggering the construction of a new park is as follows: Once a deficit of park acreage in a quadrant is identified, a new park must be scheduled for construction within the time frame of five years, or before the cumulative construction of 1,562 dwelling units, whichever occurs later.

\*\*\* According to City Council Resolution No. 97-435, "scheduled for construction" means that the improvements have been designed, a park site has been selected, and a financing plan for construction of the facility has been approved. Alga Norte Park meets the definition of "scheduled for construction".

Based on the current FY 09-10 CIP list of projects, Alga Norte Park (32 acres) and Veteran's Memorial Park (100 acres, with 25 acres applied to each quadrant) are proposed to be constructed prior to buildout. Construction of these parks would result in a citywide total park acreage of 414 acres, which will exceed the performance standard citywide by 56 acres (based on projected buildout population numbers). See below for a summary of the data. In addition, the projected park inventory for all city quadrants will exceed the projected demand at buildout, as shown below:

<b>Quadrant</b>	<b>Buildout Population *</b>	<b><i>Projected demand</i></b>	<b>Current Inventory</b>	<b>Proposed park acreage</b>	<b><i>Projected Inventory</i></b>
NW	34,187	103	91	25	116
NE	18,905	57	42	25	67
SW	26,330	79	71	25	96
SE	39,357	118	78	57	135
<b>Total</b>	<b>118,779</b>	<b>357</b>	<b>282</b>	<b>132</b>	<b>414</b>

\* Reflects SANDAG 2050 Regional Growth Forecast (see pages 8 and 9 of this report)

#### **D. Other Items**

Figures above for proposed park acreage do not include park projects listed in the CIP as "unfunded" (e.g. Business Park Recreational Facility, Robertson Ranch Park, Cannon Lake Park, Pine Park Madison Properties, etc.). Should alternative funding mechanisms be found, and these be parks built, the additional park acreage would further aid in meeting/exceeding the Growth Management park performance standard.



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## DRAINAGE

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### **A. Performance Standard**

Drainage facilities must be provided as required by the City concurrent with development.

### **B. CY 2009 Facility Adequacy Analysis**

All areas of the City currently meet the growth management drainage performance standard.

The standard for drainage distinguishes it from the other public facility standards because, by its very nature, drainage facility needs are more accurately assessed as specific development plans for individual projects are finalized. Therefore, the drainage performance standard was written to allow the City to require appropriate drainage facilities as development plans are finalized and approved.

Smaller drainage facilities are addressed during the review of individual project proposals. The larger 'backbone' drainage facilities are addressed in the City's 2008 Drainage Master Plan. The City's Planned Local Drainage Area (PLDA) fee program was established to assist developers and land owners with the financing of the larger 'backbone' facilities identified in the Drainage Master plan.

There is one area in the City where special conditions are being applied to development projects to ensure compliance with the drainage performance standard. The Agua Hedionda and Calavera Creek channels located east of El Camino Real within the residential community of Rancho Carlsbad were found to be of inadequate size to contain the 100 year flood event. Projects located within LFMP Zones 5, 7, 14, 15, 16, 18 and 24 that drain to the Agua Hedionda or Calavera Creek must comply with the following special conditions to maintain compliance with the drainage performance standard:

1. Financially guarantee construction of the master planned drainage improvements needed to mitigate flooding impacts within the residential community of Rancho Carlsbad.
2. Install onsite drainage improvements to ensure that direct drainage impacts resulting from the proposed development do not exacerbate the potential for downstream flooding of existing development.

The financial guarantee (special condition 1 above) includes payment of the existing PLDA fee and a requirement to enter into an agreement to pay the proposed updated PLDA fee that guarantees financing for all required drainage

facilities needed to mitigate the existing flooding condition. Subsequent to the City Council's adoption of the PLDA fee structure and the 2008 Drainage Master Plan, all development projects must pay revised PLDA fees.

**C. Buildout Facility Adequacy Analysis**

The 2008 Carlsbad Drainage Master Plan proposes the construction of new facilities to accommodate potential storm events. Construction of the proposed Master Drainage Facilities will ensure the Drainage performance standard is maintained through buildout of the city. The 2008 Carlsbad Drainage Master Plan also updated the PLDA program to ensure adequate funds are available to fund construction of needed flood control facilities. The estimated costs for these facilities and the programming of PLDA funds are included in the annual Operating Budget and Capital Improvement Program.

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## CIRCULATION

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### A. Performance Standard

No road segment or intersection in the Local Facility Management Zone (LFMZ) nor any road segment or intersection out of the zone which is impacted by development in the zone shall be projected to exceed a service level C during off-peak hours, nor service level D during peak hours. Impacted means where 20% or more of the traffic generated by the local facility management zone will use the road segment or intersection.

### B. CY 2009 Facility Adequacy Analysis

All intersections and roadway segments currently comply with the Circulation System performance standard.

For purposes of monitoring traffic throughout the City, the capacity of an intersection or roadway segment is compared to the actual volumes measured in the field and reported in terms identified as a "Level of Service (LOS)". The definition of "Level of Service" is a quantitative measure of traffic conditions that reflects how restrictive vehicle movements are, or may become. The six levels of traffic service range from A to F. LOS Level A represents the most ideal conditions; Level E is at capacity; and Level F indicates forced flow, or stop and go traffic representing a gridlock condition. The Transportation Research Board Highway Capacity Manual further defines LOS based on specific measurements of traffic volumes and roadway capacities.

The Growth Management Traffic Monitoring Program for 2009 (see Appendix A for the 2009 Traffic Monitoring Program report summary) included 34 roadway segments and 67 intersections. Results indicate all roadway segments and intersections meet the Growth Management Circulation performance standard, as follows:

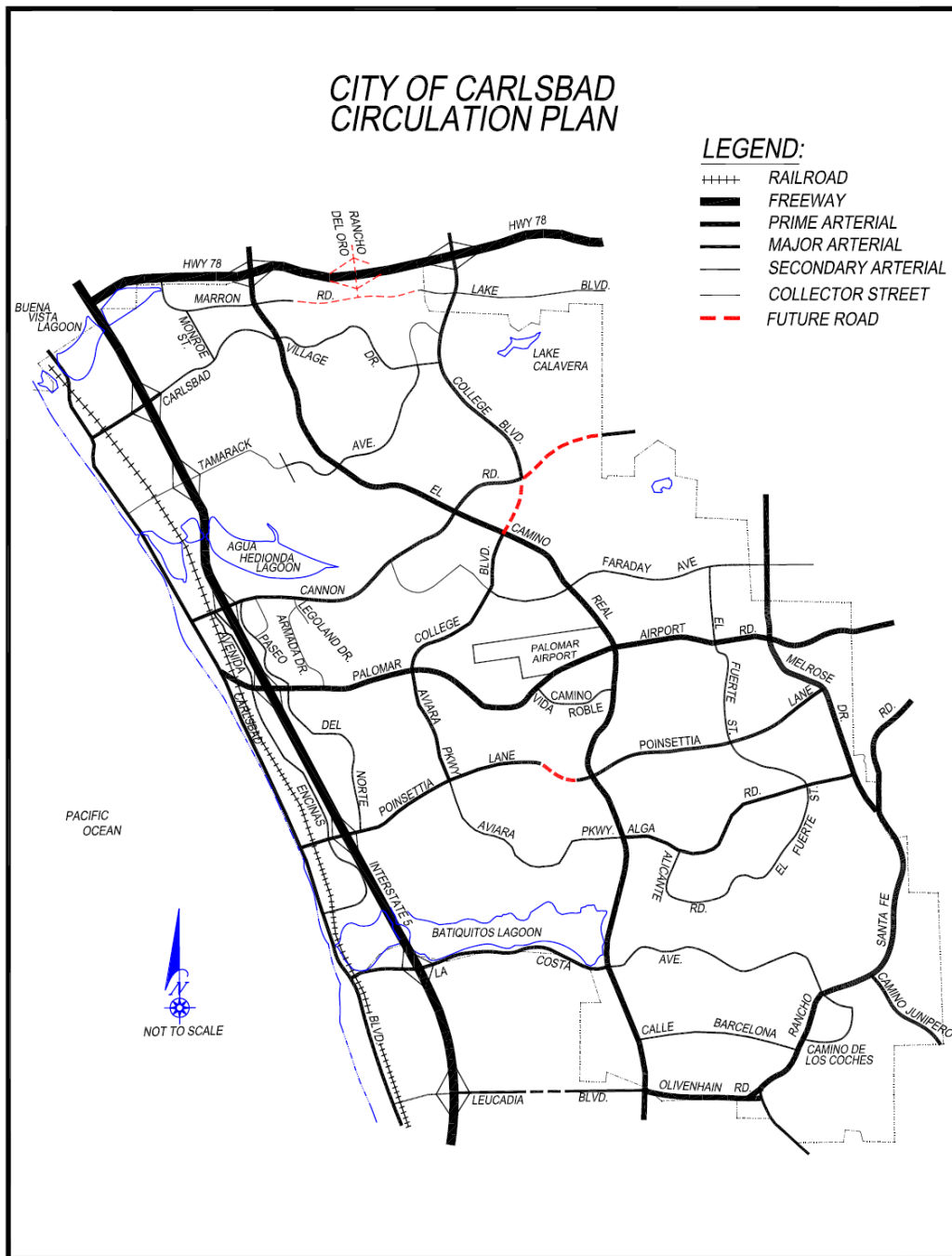
- All 34 roadway segments operate at a LOS B or better during AM and PM peak hours.
- During AM and PM peak hours, 63 intersections operate at a LOS C or better
- During AM and PM peak hours, the following 4 intersections operate at a LOS D or better, which remains consistent with the performance standard.
  - El Camino Real/Cannon Road
  - El Camino Real/La Costa Avenue
  - Palomar Airport Road/Melrose Drive, and
  - Palomar Airport Road/I-5 northbound off ramp

### **C. Buildout Facility Adequacy Analysis**

The Traffic Monitoring Program will continue to be utilized to monitor LOS and verify road and intersection performance and compliance with Growth Management standards at buildout.

In addition, future road segments have been identified in the Circulation Element of the General Plan as necessary to accommodate the buildout of the city (see Figure 6). Traffic forecasts for Carlsbad prepared by SANDAG are based on the buildout of the General Plan, which is based on the Growth Management Plan, and future regional traffic projections. To ensure compliance with the Growth Management Plan, all of the city's LFMPs detail the construction and financing plans for any circulation improvements identified by the traffic forecasts as necessary to accommodate the future buildout. For more information about the funding of circulation improvements, please see the Capital Improvement Program Budget for FY2009 - 2010.

Figure 6



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## FIRE

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### **A. Performance Standard**

The number of dwelling units outside a five-minute “travel time” from the nearest fire station shall not exceed 1,500 units.

### **B. CY 2009 Facility Adequacy Analysis**

The City’s Fire facilities are in compliance with the Growth Management performance standard. There are no more than 1,500 dwelling units outside of a five-minute travel distance from any of the City’s six fire stations.

The intent of the GMP standard, as applied to Fire facilities, is to establish the number of stations and their locations, based upon travel distances. At the time the GMP was developed, scientific fire behavior information and recognized best practices supported the position that a response time of five minutes would result in effective fire incident intervention. To determine the most desirable geographic sites for future fire stations, it was necessary to convert the five-minute response time to a measurable distance that could be applied to a future road network scheme. Because the GMP provides no other trigger mechanism for the installation of additional fire stations, it follows that up to 1,500 dwelling units could exist outside the five-minute reach of the closest fire station for an indeterminate length of time without violating the GMP standard. The five-minute travel time measure was selected exclusively as a means of logically positioning emergency response resources throughout the City. Therefore, the standard is applied as a means of measuring compliance with locating fire facilities in accordance with the GMP, not the performance of the Fire Department in meeting service responsibilities. The GMP Fire performance standard is utilized to determine the number of fire stations and their locations, not Fire Department response times.

### **C. Buildout Facility Adequacy Analysis**

At buildout no single fire station district will exceed the established threshold of more than 1,500 units that exist outside of a five minute travel time.

To determine if Fire facilities will be adequate at buildout, the City’s Geographic Information System Department (GIS) created a map based upon the following information:

- Existing fire station locations, except Station No. 3, which was sited at its planned future location (just east of the northeast corner of the intersection of Cannon Road and El Camino Real)

- Anticipated future development
- 2.5 mile road distance from each of the 6 Fire Stations (five minute “travel time” equates to road driving distance of 2.5 miles);
- All planned, major roadway arterials; and
- The number of dwelling units projected at buildout that will be located outside of the 2.5 mile road (5 minute) distance from each fire station

The GIS map, based upon the above-noted assumptions, revealed the following findings:

<u>Fire Station Number</u>	<u>Total Number of Dwelling Units Outside of 5 Minutes</u>
1, 3 & 4 (Aggregated)	1,010
2	798
5	897
6	811

As noted above, the GIS map analysis revealed that at buildout, the City’s existing and planned Fire facilities will meet the GMP performance standards standard (i.e. the total number of dwelling units that will exist outside of a five minute travel time from the nearest fire station will not exceed the threshold of 1,500 units).

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## OPEN SPACE

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### **A. Performance Standard**

Fifteen percent of the total land area in the Local Facility Management Zone (LFMZ) exclusive of environmentally constrained non-developable land must be set aside for permanent open space and must be available concurrent with development.

### **B. CY 2009 Facility Adequacy Analysis**

To date, adequate open space has been provided to meet the performance standard.

Open space to meet the performance standard is provided concurrent with approval of projects. The location of performance standard open space must be indicated during project-specific analysis. It must be in addition to any constrained areas, such as protected wildlife habitat or slopes greater than 40%. At the time the Citywide Facilities and Improvements Plan was adopted (1986), the LFMZ's were divided into: a) those that were already developed and considered in compliance with Growth Management, and b) those that still needed to comply with the open space performance standard.

In 1986, LFMZs 1 through 10, and 16 were already developed and considered in compliance with the open space performance standard. As development occurred subsequent to the adoption of the CFIP, LFMZs 11 – 15, 17 – 21, and 23 – 24 have provided adequate open space to meet the performance standard.

LFMZ 22 is still developing and, as future development occurs, open space will be required to meet the performance standard.

LFMZ 25 is largely undeveloped and no LFMP has been adopted for this zone. Before development is allowed in this area, an LFMP must be adopted that demonstrates how the open space performance standard will be met.

### **C. Buildout Facility Adequacy Analysis**

As discussed above, all LFMZs, except for Zones 22 and 25, have met the Growth Management open space performance standard. Future projects in LFMZs 22 and 25 must provide open space in compliance with the performance standard.



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## SCHOOLS

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### **A. Performance Standard**

School capacity to meet projected enrollment within the Local Facility Management Zone (LFMZ) as determined by the appropriate school district must be provided prior to projected occupancy.

### **B. CY 2009 Facility Adequacy Analysis**

Currently, school capacity is in compliance with the Growth Management School performance standard (see below). The City is served by four school districts as listed below:

#### **1. Carlsbad Unified School District**

According to the Carlsbad Unified School District Facilities Master Plan (2007), sufficient student capacity exists through 2014.

#### **2. San Marcos Unified School District**

Projections for enrollment and school capacity analysis were not available; however, it is Carlsbad's practice to require all development projects to pay impact fees to the appropriate school district to ensure adequate facilities are provided.

#### **3. Encinitas Union Elementary School District**

According to demographics data in the Encinitas Union Elementary School District Facilities Master Plan (Nov. 2004), sufficient student capacity exists through 2015.

#### **4. San Dieguito Union High School District**

Based on demographic projections provided by San Dieguito Union High School District, it is estimated that schools serving Carlsbad will have sufficient student capacity through 2018.

### **C. Buildout Facility Adequacy Analysis**

Based on available information, as indicated above, it is estimated that school districts will maintain sufficient capacity through the years 2014 – 2018. School enrollment projections and facility master plans will be periodically updated by the school districts, allowing future capacity analysis to be performed to verify enrollment can be accommodated.

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## SEWER COLLECTION SERVICES

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### A. Performance Standard

Trunk-line capacity to meet demand, as determined by the appropriate sewer districts, must be provided concurrent with development.

### B. CY 2009 Facility Adequacy Analysis

Sewer improvements are provided on a project by project basis concurrent with development. Currently, the City of Carlsbad's Sewer service area sewer pipelines are in compliance with the Growth Management Sewer Collection Services performance standard. Representatives from the sewer districts that serve Carlsbad (Carlsbad Sewer District, Leucadia Waste Water District and Vallecitos Water District) indicate that they currently have adequate conveyance capacity in place to meet Carlsbad's sewer collection demands.

The City of Carlsbad is served by the following four major interceptor systems and is described in more detail as follows:

Interceptor System	Sewer Districts Served	Carlsbad Capacity Rights
<b><i>Vista/Carlsbad Interceptor</i></b>	Carlsbad Sewer & Vista Sanitation Districts	Varies from 0%/0 MGD up to 50%/33.6 MGD
<b><i>Buena Interceptor</i></b>	Carlsbad Sewer, Vista Sanitation & Buena Sanitation Districts	Varies from 18% /1.2 MGD up to 35%/ 3.0 MGD
<b><i>Vallecitos Interceptor</i></b>	Carlsbad Sewer & Vallecitos Water District	5 MGD
<b><i>Occidental Sewer</i></b>	Carlsbad Sewer, Encinitas Sanitation & Leucadia Sanitation Districts	8.5 MGD

Note: MGD = million gallons per day

For both the Vista/Carlsbad Interceptor and the Buena Interceptor, the percentage of Carlsbad capacity rights increases in the downstream reaches of each interceptor system (0% in the upstream reaches as they enter the Carlsbad service area and up to 35% or 50% in the downstream reaches for Buena Interceptor and Vista/Carlsbad Interceptor, respectively as they enter the Encina Water Pollution Control Facility).

### **C. Buildout Facility Adequacy Analysis**

The 2003 City of Carlsbad Sewer Master Plan evaluated the sewer infrastructure needs of the Carlsbad's Sewer service area and identified those facilities required to accommodate future customers at buildout. The master plan identified the Vista/Carlsbad Interceptor as requiring improvements to accommodate buildout demand (see below). Sewer trunk main capacities are estimated by comparing wastewater flow projections to the capacity of the sewer system. Using a sewer model, the existing and future sewer demands are estimated and compared to the capacity. In addition, annual flow measurement information is also used to determine actual flows in the sewer trunk mains.

***Vista/Carlsbad Interceptor:*** A capacity analysis included in the 2003 City of Carlsbad Sewer Master Plan indicates three relatively flat pipeline portions of Reaches VC13, VC14 & VC15. As a result, during peak period flows, the pipeline is flowing full. The FY 09/10 Capital Improvement Program has identified funds for construction of upgrades to these reaches projected to begin in FY 09/10. The replacement pipelines are sized based on ultimate flows from both the Carlsbad and City of Vista Sewer systems.

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## WATER DISTRIBUTION SERVICES

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### A. Performance Standard

Line capacity to meet demand as determined by the appropriate water district must be provided concurrent with development. A minimum of 10-day average storage capacity must be provided prior to any development.

### B. CY 2009 Facility Adequacy Analysis

Carlsbad's water distribution is provided by the Carlsbad Municipal Water District (CMWD), Vallecitos Water District (VWD) and Olivenhain Municipal Water District (OMWD). These districts indicate that they have adequate capacity to meet the Growth Management performance standard.

Water service demand requirements are estimated using a computer model to simulate the two water distribution scenarios: 1) maximum day demand plus a fire event, 2) peak hour demand. This computer model was calibrated using actual flow measurements collected in the field to verify it sufficiently represents the actual water system.

Existing and future daily demand and storage requirements for CMWD:

Existing Maximum Day Demand	33 MGD
Existing Storage Requirement	40 MG
Existing Storage Capacity	51 MG
Future Maximum Daily Demand	40 MGD
Future Storage Requirement	55 MG

Based on the water model analysis prepared with the 2003 CMWD Water Master Plan, future pipelines and water system facilities were identified to ensure a complete water system is constructed to accommodate future customers. In addition, funds for the construction of future facilities were included in the FY09/10 Capital Improvement Program. Therefore, the future water infrastructure is programmed to be in place at the time of need in order to ensure compliance with the performance standard.

For CMWD the existing average daily demand peaked in 2007 at 21.8 MGD. For 2009 the annual demand reduced to 19.3 MGD as a result of implementation of a new tiered water rate structure and a campaign to reduce customer consumption by the wholesale water agencies. To meet the 10 day storage requirement, CMWD needs 218 MG of storage capacity. CMWD has a storage capacity of 249 MGD which consists of 195 MGD of storage capacity at Maerkle Dam and an additional 54 MGD of storage capacity in various storage tanks throughout the distribution system. In 2004, the OMWD completed construction of a water treatment facility at the San Diego County Water Authority Emergency Storage

Reservoir, which provides the storage necessary to meet the 10 day storage requirement for OMWD.

### **C. Buildout Facility Adequacy Analysis**

The 2003 CMWD Water Master Plan identifies facilities necessary for buildout conditions within its service area. The update identified additional improvements required to meet future water demands and the need for two additional water storage tanks to meet future 10 average-day storage requirements.

As proposed land development projects are reviewed by the City, the CMWD Water Master Plan is consulted to check pipeline sizes and facility capacities to verify adequacy to support the water needs of the project and city. To comply with water master plan requirements, land development projects may be required to install a master plan water project concurrent with construction of that specific project.